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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,988	12/28/2001	Thomas H. DiStefano	TESSERA 3.0-146 DIV	9840
530	7590	01/07/2004	EXAMINER	
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090			NORRIS, JEREMY C	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/033,988	Applicant(s) DISTEFANO ET AL.	
	Examiner Jeremy C. Norris	Art Unit 2827	

-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 2-4,6,9-12 and 14-17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 is/are allowed.
- 6) ☒ Claim(s) 1,5,7,8,13 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1201. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of group I, claims 1, 5, 7, 8, 13, 18, and 19 in the response dated 14 October 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Objections

Claim 19 is objected to because of the following informalities: In line five of the claim the phrase "first boning pads". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US 5,173,055 (hereafter Grabbe).

Grabbe discloses, referring to figures 1-11, a connection component for a microelectronic element assembly, said component comprising: A. a support structure having a dielectric layer (40), a plurality of first regions, a second region, and a top surface, wherein the top surface is defined by the plurality of first regions and the second region; B. a plurality of adhesion promoter regions (38), each of said adhesion promoter regions being associated with one of said plurality of first regions, disposed

over the associated first region, and comprised of an adhesion promoter; C. a plurality of leads (10) disposed on the dielectric layer, each of said leads having a terminal end associated with one of said plurality of adhesion promoter regions and permanently connected the associated adhesion promoter region, and a tip end releasably attached to the second region and offset from the terminal end; and D. a plurality of release interfaces, each of said release interfaces being associated with a tip end, wherein each of said release interfaces is located between the associated tip end and the second region of the support structure and wherein each of said release interfaces is free of the adhesion promoter (see figure 6) [claim 1].

Claims 5 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,536,909 (hereafter DiStefano).

DiStefano discloses, referring to figures 2 & 5, a connection component for a microelectronic element assembly, said component comprising: A. a support structure having a dielectric layer (38), a plurality of first regions (102), a second region (covered by layer 36), and a top surface (99), wherein the top surface is defined by the plurality of first regions and the second region; B. a plurality of leads (56, 58) disposed on the top surface, each of said leads having a terminal end (66) permanently connected to the second region; and a tip end associated with one of the plurality of first regions, disposed over the associated first region, and offset from the terminal end; and C. a plurality of release interfaces, each of said release interfaces corresponding to one of said plurality of leads, located between the tip end of the corresponding lead and the associated first region of said support structure [claim 5]. Examiner notes that the

limitation "formed by locally heating the tip end of the corresponding lead" is a process limitation in a product claim and is therefore considered only to the extent that it impacts the structure of the device. Moreover, it is well settled that the presence of process limitations in product claims, which product does not otherwise distinguish over the prior art, cannot impart patentability to that product. (*In re Thorpe*, 227 USPQ 964, 966)

Additionally, DiStefano discloses, referring to figures 2 & 8, a connection component for a semiconductor assembly, said component comprising: A. a support structure having a dielectric layer (38) and a top surface (99); B. a plurality of first bonding pads (48, 50) disposed on the top surface; wherein each first bonding pad is comprised of a first conductive material; C. a plurality of second bonding pads (102) disposed on the top surface, wherein each of the second bonding pads is associated with one of the first bonding pads and is comprised of a second conductive material; and D. a plurality of leads (52, 54), wherein each lead has a terminal end permanently connected to one of the plurality of first bonding pads; and a tip end connected to the associated second bonding pad and offset from the terminal end; wherein the permanent connection between the terminal end and the first bonding pad is stronger than the connection between the tip end and the associated second bonding pad [claim 19].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiStefano in view of US 6,110,761 (hereafter Ahmad).

DiStefano discloses, referring to figure 2 & 5, a connection component for a microelectronic element assembly, said component comprising: A. a support structure having a dielectric layer (38), a plurality of first regions (102), a second region, and a top surface, wherein the top surface is defined by the plurality of first regions and the second region; B. a plurality of leads (58) disposed on the top surface, each of said leads having a terminal end permanently connected to the second region; and a tip end associated with one of the plurality of first regions, disposed over the associated first region, and offset from the terminal end; and C. a plurality of release interfaces, each of said release interfaces corresponding to one of said plurality of leads, located between the tip end of the corresponding lead and the associated first region of said support structure. DiStefano does not specifically state that the release interfaces are formed

by depositing a heat susceptible material on each of the plurality of first regions [claim 7]. However, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to use a heat cured adhesive between the pads and the leads since Ahmad teaches using such a material at an interface between an electrically conductive pad and an electrically conductive lead (see col. 2, lines 50-65). The motivation for doing so would have been to provide a reliable one-step electrical/mechanical connection (see Ahmad col. 2, lines 45-50).

Similarly, DiStefano discloses, referring to figures 2 & 5, a connection component for a microelectronic element assembly, said component comprising: a support structure having a dielectric layer (38), a plurality of first regions (102), a second region, and a top surface, wherein the top surface is defined by the plurality of first regions and the second region; and a plurality of leads (58) disposed on the top surface, each of said leads having a terminal end permanently connected to the second region; and a tip end associated with one of the plurality of first regions, releasably attached to the first regions, and offset from the terminal end; wherein the second regions is free of a polymer. DiStefano does not specifically state a plurality of polymer layers, each of said polymer layers being associated with one of said plurality of first region, disposed over the associated first region, and comprised of a polymer over the plurality of first regions [claim 8]. However, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to use a heat cured polymer adhesive between the pads and the leads since Ahmad teaches using such a material at an interface between an electrically conductive pad and an electrically conductive lead (see col. 2, lines 50-65

and col. 4, lines 40-50). The motivation for doing so would have been to provide a reliable one-step electrical/mechanical connection (see Ahmad col. 2, lines 45-50).

Regarding the limitation "wherein the plurality of polymer layers is formed by electrophoretically depositing the polymer over the plurality of first regions", Examiner notes that the limitation is a process limitation in a product claim and is therefore considered only to the extent that it impacts the structure of the device. Moreover, it is well settled that the presence of process limitations in product claims, which product does not otherwise distinguish over the prior art, cannot impart patentability to that product. (*In re Thorpe*, 227 USPQ 964, 966)

In addition, DiStefano discloses, referring to figures 2 & 5, a connection component for a microelectronic element assembly, said component comprising: a support structure having a dielectric layer (38), a plurality of first regions (102), a second region, and a top surface (99), wherein the top surface is defined by the plurality of first regions and the second region; a plurality of leads (58) formed on the second region and the plurality of conductive layers, each of the leads having a terminal end connected to the second region; and a tip end associated with one of the plurality of conductive layers, connected to the associated conductive layer, offset from the terminal end, and comprised of a second conductive material. DiStefano does not specifically disclose a plurality of conductive layers, wherein each of the conductive layers is associated with one of the plurality of first regions, disposed on the associated first region, and comprised of a first conductive material, wherein the melting point of the second conductive material is higher than the melting point of the first conductive

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material [claim 13]. However, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to use a heat cured polymer adhesive between the pads and the leads since Ahmad teaches using such a material at an interface between an electrically conductive pad and an electrically conductive lead (see col. 2, lines 50-65 and col. 4, lines 40-50). The motivation for doing so would have been to provide a reliable one-step electrical/mechanical connection (see Ahmad col. 2, lines 45-50).

Allowable Subject Matter

Claim 18 is allowed.

The following is a statement of reasons for the indication of allowable subject matter: Claim 18 states the limitation "a plurality of graphite regions disposed over the plurality of first regions, each of said plurality of graphite regions associated with one of said plurality of first regions and prepared by depositing graphite over the associated first regions". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,280,139	Suppelsa et al.,
US 6,225,573	Nakamura,
US 6,497,581	Slocum et al.

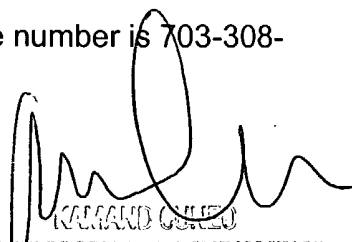
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Tuesday - Friday, 10am - 7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-308-0725.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JCSN



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